

ABSTRACT OF THE DISCLOSURE

A novel technique and structure that maximizes the extraction of information from reference pulses for UWB-TR receivers is introduced. The scheme efficiently processes an incoming signal to suppress different types of UWB as well as non-UWB interference prior to signal detection. Such a method and system adds a feedback loop mechanism to enhance the signal-to-noise ratio of reference pulses in a conventional TR receiver. Moreover, sampling the second order statistical function such as, for example, the autocorrelation function (ACF) of the received signal and matching it to the ACF samples of the original pulses for each transmitted bit provides a more robust UWB communications method and system in the presence of channel distortions.